Math 212
Quiz 29

M 07 Nov 2016

Your name: _____

Exercise

(2 pt) State the method you would use to evaluate each of the following integrals. Choose from the following options.

- Change of variables
- Change the order of integration (Fubini's theorem)
- Cylindrical coordinates
- Rectangular coordinates
- Spherical coordinates

(a) (0.5 pt) $\int_{x=0}^{x=1} \int_{y=-x+2}^{y=x+2} \frac{x-y}{x+y}\, dA$

(b) (0.5 pt) $\int_{0}^{1} \int_{\sqrt{y}}^{1} \frac{ye^{x^2}}{x^3}\, dx\, dy$

(c) (0.5 pt) $\int_{x=-2}^{x=2} \int_{y=-\sqrt{4-x^2}}^{y=\sqrt{4-x^2}} \int_{z=0}^{z=3-y} 1\, dz\, dy\, dx$

(d) (0.5 pt) $\int_{-2}^{2} \int_{0}^{\sqrt{4-y^2}} \int_{-\sqrt{4-x^2-y^2}}^{\sqrt{4-x^2-y^2}} y^2 \sqrt{x^2+y^2+z^2}\, dz\, dx\, dy$